



# International Heliophysical Year

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## International Heliophysical Year

J.Davila, N.Gopalswamy, B.Thompson (NASA/GSFC)

The International Heliophysical Year (IHY), an international program of scientific collaboration to understand the external drivers of planetary environments, will be conducted in 2007. This will be a major international event of great interest to the member States. The IHY will involve the deployment of new instrumentation, new observations from the ground and in space, and an education component.

The IHY 2007 will coincide with the fiftieth anniversary of the International Geophysical Year (IGY) in 1957. The IGY was organized to study global phenomena of the Earth and Geospace involving about 60,000 scientists from 66 nations, working at thousands of stations, around the world to obtain simultaneous, global observations from the ground and space.

Building on results obtained during IGY 1957, the IHY will expand to the study of universal processes in the solar system that affect the interplanetary and terrestrial environments. The study of energetic events in the solar system will pave the way for safe human space travel to the Moon and planets in the future, and it will serve to inspire the next generation of space physicists.

Specific objectives of the IHY are to:

- Provide benchmark measurements of the response of the magnetosphere, the ionosphere, the lower atmosphere and Earth surface to identify global processes and drivers which affect the terrestrial environment and climate
- Global study of the Sun-heliosphere system outward to the heliopause to understand the external, and historic drivers of geophysical change
- Foster international scientific cooperation in the study of Heliophysical phenomena now and in the future
- Communicate the unique scientific results of the IHY to the interested scientific community and to the general public .

The IGY 1957 was one of the driving events to establish UNCOPUOS as well as many other scientific institutions which survive today. The IHY will provide an opportunity of COPUOS and other relevant organizations to review their achievements over the last 50 years.

The IHY strongly complements the International Living With a Star (ILWS) program, providing more attention nationally, regionally, and internationally for the ILWS program through support of STSC.

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## International Efforts:

N. Gopalswamy (NASA/GSFC)

Dr. Stepanyan is the national representative for Ukraine.

Dr. Alexander Stepanov will be the FSU coordinator . He is identifying national reps in the FSU region.

The Use of Space Technology: Opportunities and Challenges for South-Eastern Europe and Black Sea Region (BSEC) workshop will be held in Sofia in January. Dr. Katya Georgieva (Bulgarian National Rep) will present a brief overview of IHY and propose a regional IHY planning meeting be held in Bulgaria (June 2005) organized by the Solar-Terrestrial Influences Laboratory at the Bulgarian Academy of Sciences (the IHY coordination center in Bulgaria).

BSEC member countries: Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Georgia, Greece, Moldova, Romania, Russia, Serbia and Montenegro, Slovenia, Turkey, and Ukraine.

**IHY North American Planning Workshop:** We are pleased to announce that the plans for the IHY North American Community Science Planning Workshop are almost finalized, and registration is now open: [http://ihy.gsfc.nasa.gov/events/feb2005\\_reg.shtml](http://ihy.gsfc.nasa.gov/events/feb2005_reg.shtml). Lodging and meeting information is also available on the site. Please report any glitches in the registration page to [ihy@ihy.gsfc.nasa.gov](mailto:ihy@ihy.gsfc.nasa.gov)!

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The United Nations Basic Space Science Initiative (UNBSSI) has a major role to play, to put the "I" into "IHY". A major thrust of the IHY is to deploy arrays of small instruments such as magnetometers, radio antennas, GPS receivers, all-sky cameras, etc. around the world to provide global measurements of heliospheric phenomena. Scientific teams will be organized through UNBSS, which will consist of a lead scientist who will provide the instruments or fabrication plans for instruments in the array. Scientists from UNBSS member states will participate in the instrument operation, data collection, analysis, and publication of scientific results. Support for local scientists, facilities and data acquisition will be provided by the host nation. Support in-kind and in-cash by the STSC is needed for the organization and deployment of these instrument arrays. In addition, support at the Government level is needed for local scientists to participate in the IHY instrument array program.

To complement the ground based data, huge amounts of data from space based missions on Earth and heliospheric phenomena are freely accessible and need to be analyzed in the course of IHY. Support at the Government level is needed for local scientists to participate in the analysis and interpretation of this data is needed.

This work has already begun. UNBSSI, since June 2004, in cooperation with IHY Organizers has begun a worldwide outreach to disseminate basic information on IHY (IHY web site, IHY newsletter, IHY/UN flyer, UNOOSA web site). These web sites provide basic information on the IHY, and are particularly useful for scientists in developing nations.

The timeline for the IHY is as follows:

- 2005:** Synthesis from regional to international plans, merging of science working groups and campaigns, "backfilling" missing initiatives; Planning and UNBSS Workshops
- 2006:** Research prototyping, review and finalize campaign proposals, proposals to national funding agencies; Planning and UNBSS Workshops
- 2007:** IHY campaigns, establish data bases and tools; Kickoff and UNBSS Workshops

**2008 - 2009:** Workshops (Topical and UNBSS), publications, archives

A five-year agenda item on IHY/ILWS would provide the opportunity to update the Subcommittee on the International Heliophysical Year program, and the efforts already taking place around the world to plan this important event.

**An NSF Solicitation:** Deadline: March 10, 2005  
J. Davila (NASA/GSFC)

Partnerships for International Research and Education is available. This funding opportunity appears appropriate for activities between US institutions and developing countries. This program solicitation is a one-time opportunity issued by the Office of International Science and Engineering (ISE) in the Office of the Director at the National Science Foundation. Full Solicitation NSF 05-533 <http://www.nsf.gov/pubs/2005/nsf05533/nsf05533.htm>

## Upcoming Events:

### **AGU: 23 - 27 May**

There will be several special sessions related to IHY and IPY.

#### **AGU Special session SA02**

The Response of Planetary Atmospheres to Solar Irradiance [Link]

#### **AGU Special session SA07**

Comparative Studies of Planetary Thermospheres and Their Dynamics Using GCMs [Link]

#### **AGU Special session SH09**

Universal Physical Processes in the Solar System [Link]

#### **AGU Special session C02**

International Polar Year 2007-2008 [Link]

## Abstract Deadlines

- Spring AGU: February 10
- 2005 Asia-Oceania Geosciences Society (AOGS): January 31

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**THE ENTIRE IHY TEAM  
WOULD LIKE TO WISH YOU  
A VERY HAPPY 2005!**

## Newsletter Submissions:

We are always looking for contributions to the IHY newsletter! Do you have an article, announcement, meeting summary, an interesting IHY highlight or effort? Submit it to:

[emilie@ihy.gsfc.nasa.gov](mailto:emilie@ihy.gsfc.nasa.gov)

IHY US Planning Meeting Boulder, CO February 16 - 18, 2005. [Link]

<http://ihy.gsfc.nasa.gov>

**Contact:** IHY needs you! Do you have any projects or web sites which are relevant to IHY? Know of a meeting, workshop, or other activity which may provide a great opportunity for IHY planning, contact, or coordination? Email us at [ihy@ihy.gsfc.nasa.gov](mailto:ihy@ihy.gsfc.nasa.gov) or visit [http://ihy.gsfc.nasa.gov/get\\_involved.shtml](http://ihy.gsfc.nasa.gov/get_involved.shtml) to join the IHY email list and register your support.

## UN IHY/Basic Space Science Workshops.

B.Thompson (NASA/GSFC)

The United Nations / ESA Basic Space Science Workshops, since 1991, have worked to stimulate and establish Basic Space Science activities in Developing Nations. The Planning Team for the IHY/Basic Space Science Workshops held its first meeting in October 2004. The team was able to identify several global instrumentation initiatives which can be deployed in developing nations as part of IHY. The workshops in the upcoming years will focus on establishing connections with developing nations and exploring instrumentation opportunities.

The first joint IHY /U.N./ ESA Basic Space Science Workshop will be held at the United Arab Emirates University, 20-23 November 2005. Although the workshop will be open to address all scientific results, and plans for basic space science in developing nations, special emphasis will be given to the possibilities offered by the preparations for the International Heliophysical Year (IHY). Additional workshops will be held annually. Interested parties who have access to the World Wide Web may register their participation in the IHY Science Coordination Database.

## IHY Education and Public Outreach (E/PO)

E.Drobnes (NASA/GSFC)

Members of the IHY E/PO Advisory Committee met during the Fall AGU to discuss key issues such as finalizing the committee itself and the future direction of IHY E/PO. It was agreed to have a small 10-12 person committee composed of key national and international members. The committee should be finalized by the end of February.

Also discussed were the future plans and goals of IHY E/PO. One strong possibility is to organizing an E/PO workshop in 2006 which would bring together the international scientific E/PO community and provide the opportunity to exchange ideas, network, and explore possible collaboration opportunities. A few outstanding E/PO efforts would be identified during the workshop, be endorsed by the Advisory Committee, and aided to help find sources of funding for implementation on a larger scale.

About two years after the IHY, in 2009, the advisory committee would design a traveling exhibit telling the story of IHY. Its history, the people involved and the discoveries made.

The committee will have a telecon in the upcoming week to further discuss the above plan. If interested in IHY E/PO efforts and have ideas to share, please plan on attending the Education and Public Outreach working lunch during the IHY planning meeting in Boulder!

## USRI General Assembly

K. S. Balasubramaniam

Next general assembly of International Union of Radio Science (URSI) will be held in New Delhi, India during October 23-29, 2005. The website [www.ursiga2005.org](http://www.ursiga2005.org) gives you the updated information on this General Assembly.

The abstract submission deadline is February 1, 2005.

## Endorsements:

### International Astronomical Union (IAU)

Dave Webb

The IHY is now officially represented within the International Astronomical Union (IAU). It is listed on the IAU web site under "IAU Representatives to International Organizations" [Link] Dave Webb is the IAU Representative to IHY.

### Asia Oceania Geosciences Society (AOGS)

N.Gopalswamy (GSFC)

The Asia Oceania Geosciences Society (AOGS) has endorsed the IHY 2007 and is interested in promoting the activities toward IHY 2007 and the associated scientific activities. Dr. Wing-Huen Ip, President of AOGS writes, "This program [IHY 2007] will certainly help the scientific community in the vast region of Asia and Oceania to build up the infrastructure and scientific know-hows." Dr. Iver Cairns, president of the AOGS Solar Terrestrial section will be the AOGS contact point for IHY activities.

## IHY Science Corner:

Have an interesting IHY Science Highlight that you would like to contribute for the next newsletter? This could be your forum! Send submissions to:

[bala@nso.edu](mailto:bala@nso.edu)

U.S. Senate approves Resolution 466: IGY/IPY 2007 Science Year. [Link]